AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A fluid heating device comprising a housing

having an internal chamber[[,]];

a fluid inlet and a fluid outlet disposed in said housing and in fluid communication with said internal chamber and each opening exteriorly of said housing[[,]];

a rotor mounted for rotation within said internal chamber about an axis of rotation[[,]];

said housing having an intermediate portion positioned radially outwardly of said rotor and end portions positioned axially outwardly of opposite faces of said rotor[[,]];

a drive shaft rotatably supported in said housing by a pair of bearings and ~~extending into said internal chamber for~~ having an inner end disposed in said housing and an outer end disposed outwardly of said housing for receiving power input, said drive shaft imparting mechanical energy to said rotor, [[wherein]] and where each of said pair of bearings is disposed in a respective one of said end portions[[,]];

a fluid seal disposed in said housing and surrounding said drive shaft, said seal residing in the end portion opposite said fluid inlet, ~~said seal surrounding said drive shaft and said drive shaft extending past said seal and outwardly from said end portion for receiving power input~~ and where said inner end of said drive shaft is exposed to said fluid inlet[[,]];

and said rotor comprising an outer surface confronting an inner surface of said intermediate portion and defining an annular fluid volume, said fluid inlet communicating with said annular fluid volume and situated nearer a distal end of said rotor and said fluid outlet communicating with said annular fluid volume and situated nearer the proximate end of said rotor,

said outer surface having a plurality of openings disposed on said outer surface, wherein rotation of said rotor causes said plurality of openings to impart heat-generating cavitation to a fluid entering said internal chamber ~~,and wherein said fluid outlet is disposed in said intermediate portion~~.

2. (currently amended) The fluid heating device according to claim 1 wherein said ~~fluid inlet overlies said~~ axis of rotation intersects said fluid inlet opening exteriorly of said housing.

3. (original) The fluid heating device according to

claim 1, and further comprising at least one inlet port disposed in said housing and wherein said fluid inlet is in communication with said internal chamber via said at least one inlet port, said at least one inlet port disposed radially closer to said axis of rotation than said fluid outlet.

4. (original) The fluid heating device according to claim 3 wherein said at least one inlet port lies radially outwardly of one of said pair of bearings.

5. (currently amended) The fluid heating device according to claim 4 wherein said at least inlet one port has its longitudinal axis disposed parallel to said axis of rotation.

6. (original) The fluid heating device according to claim 1, and further comprising at least one inlet port in said drive shaft disposed radially inwardly of one of said pair of bearings and wherein said fluid inlet is in communication with said internal chamber via said at least one inlet port, said at least one inlet port disposed radially closer to said axis of rotation than said fluid outlet.

7. (original) The fluid heating device according to claim 6 wherein said at least one inlet port has its longitudinal axis inclined with respect to said axis of rotation.

8. (original) The fluid heating device according to claim 1, and further comprising at least one inlet port in said drive shaft and disposed radially inwardly of one of said pair of bearings to be radially closer to said axis of rotation than said fluid outlet, and wherein said at least one inlet port has a longitudinal length exceeding the longitudinal length of said rotor.

9. (currently amended) The fluid heating device according to claim 1 wherein said fluid outlet is disposed in said intermediate portion, and further comprising an internal circumferential fluid capturing groove disposed on said inner surface and positioned radially outwardly of said annular fluid volume and axially displaced from said openings, said fluid outlet disposed in said intermediate portion and positioned radially outwardly of said circumferential fluid capturing groove and fluidly communicating with said circumferential fluid capturing groove.

10. (currently amended) The fluid heating device according to claim 1 wherein said fluid outlet is disposed in said intermediate portion, and further comprising an internal circumferential fluid capturing groove disposed on said outer

surface and positioned radially inwardly of said annular fluid volume and axially displaced from said openings, said fluid outlet disposed in said intermediate portion and positioned radially outwardly of said circumferential fluid capturing groove and fluidly communicating with said circumferential fluid capturing groove.

11. (currently amended) The fluid heating device according to claim 1 wherein said housing comprises three housing members, said intermediate portion ~~comprises~~ as one housing ~~element~~ member, and where respective said end portions ~~comprise second and third housing elements~~ are the other housing members.

12. (currently amended) The fluid heating device according to claim 1 wherein said intermediate portion comprises a cylindrical housing sleeve, and where respective end portions comprise rear and front housing covers, said rear and front housing covers each provided with a circular register and said housing sleeve engaging respective registers and clamped between said rear and front housing covers by a plurality of bolts, one of said pair of bearings disposed in said rear housing cover in a position between said internal chamber and said fluid inlet,

said seal disposed adjacent the other of said pair of bearings in said front housing cover and exposed to said internal chamber.

13. (currently amended) The fluid heating device according to claim 1 wherein said annular fluid volume provides a unidirectional pathway for fluid entering said internal chamber via said fluid inlet to reach said fluid outlet, and said plurality of openings are disposed in a plurality of circumferential rows spaced about said rotor along the longitudinal axis of said rotor, wherein at least one row of said openings are circumferentially displaced from any one other row of said openings.

14-16. (canceled)

17. (original) The fluid heating device according to claim 13, wherein said rotor comprises a casting, and wherein at least a majority of said plurality of openings in said casting are aligned with respect to each other such that their longitudinal axes are disposed in parallel.

18. (original) The fluid heating device according to claim 13 wherein at least some of said openings are formed as radial holes, the longitudinal axes of said radial holes intersecting said axis of rotation.

19. (original) The fluid heating device according to claim 13 wherein at least some of said openings are formed as radial holes, the longitudinal axes of said radial holes offset from said axis of rotation.

20. (original) The fluid heating device according to claim 13 wherein at least some of said openings are formed as blind radial holes, the longitudinal axes of said blind radial holes offset from said axis of rotation, and where the bottom-end of said blind radial holes lags behind the top-end of said radial holes in the direction of rotor travel.

21. (original) The fluid heating device according to claim 13 wherein at least some of said openings are formed as radial holes and where said radial holes have a depth dimension extending the radius dimension of said rotor.

22. (currently amended) The fluid heating device according to claim 13 wherein at least some of said openings are formed as radial holes, the depth of at least some of said radial holes extending in distance to a greater dimension than the radius dimension of said rotor and where said at least some of said radial holes interconnect each other.

23. (currently amended) The fluid heating device according to claim 13 wherein at least some of said openings are formed as radial holes, the depth of at least some of said radial holes extending in distance to a greater dimension than the radius dimension of said rotor and where said at least some of said radial holes interconnect each other forming a continuous pathway in said rotor for the transmission of shock waves.

24. (currently amended) A fluid heating device comprising a housing having an internal chamber[[,]];

a fluid inlet and a fluid outlet disposed in said housing and in fluid communication with said main chamber and each opening exteriorly of said housing[[,]];

a rotor mounted for rotation within said internal chamber about an axis of rotation[[,]];

said housing having ~~a tubular portion~~ an intermediate portion positioned radially outwardly of said rotor and ~~a respective end portion~~ end portions positioned axially outwardly of opposite faces of said rotor[[,]];

a drive shaft rotatably supported in said housing by a pair of bearings and extending into said internal chamber for imparting mechanical energy to said rotor[[,]];

said rotor comprising an outer surface confronting an inner surface of said ~~tubular~~ intermediate portion and defining an

annular fluid volume, said fluid inlet communicating with said annular fluid volume and situated nearer a distal end of said rotor and said fluid outlet communicating with said annular fluid volume and situated nearer the proximate end of said rotor,

said outer surface having a plurality of openings disposed on said outer surface ~~and where at least a proportion of said openings are~~ formed as radial holes~~, the~~ having bottom-ends and top-ends with respective longitudinal axes ~~of said radial holes~~ offset from said axis of rotation, and where respective said top-ends or respective said bottom-ends are advanced in the direction of rotor rotation, wherein rotation of said rotor causes said plurality of openings to impart heat-generating cavitation to a fluid entering said internal chamber.

25. (original) The fluid heating device according to claim 24 wherein said radial holes have a depth dimension extending the radius dimension of said rotor.

26. (currently amended) The fluid heating device according to claim 25 wherein said radial holes interconnect with each other forming a continuous pathway in said rotor for the transmission of shock waves.

27-28. (canceled)

29. (currently amended) The fluid heating device according to claim [[25]] 24 wherein said radial holes are blind radial holes disposed in a plurality of circumferential rows spaced about said rotor along the longitudinal axis of said rotor.

30. (original) The fluid heating device according to claim 29 wherein at least one row of said radial holes are circumferentially displaced from any one other row of said radial holes.

31. (currently amended) The fluid heating device according to claim 24 wherein [[one]] each of said pair of bearings is disposed in [[each]] a respective one of said end ~~portion respectively~~ portions, said drive shaft having an inner end disposed in said housing and an outer end disposed outwardly of said housing for receiving power unit, a fluid seal disposed in said housing and surrounding said drive shaft, said seal residing in the end portion opposite said fluid inlet ~~and said drive shaft extending past said seal and outwardly from one said end portion for receiving power input~~ and where said inner end of said drive shaft is exposed to said fluid seal.

32. (currently amended) The fluid heating device

according to claim 24 wherein said ~~tubular portion comprises a housing sleeve~~ housing comprises three members, one of the housing members being said intermediate portion and in the form of a sleeve, and where the other two housing members are the respective end portions ~~comprise~~ in the form of rear and front housing covers, said rear and front housing covers each provided with a circular register and said housing sleeve engaging respective registers and clamped between said rear and front housing covers by a plurality of bolts, one of said pair of bearings disposed in said rear housing cover in a position between said internal chamber and said fluid inlet,

said seal disposed adjacent the other of said pair of bearings in said front housing cover and exposed to said internal chamber.

33. (currently amended) A method of heating fluids, comprising causing a fluid to enter at least one inlet passage of a device comprising a housing having an internal chamber, a rotor mounted for rotation within said chamber about an axis of rotation, said at least one inlet passage and at least one outlet passage formed in said housing and each opening exteriorly of said housing, said at least one inlet passage ~~being disposed radially closer to said axis of rotation than said at least one outlet passage~~ lying on said rotational axis, said rotor having an exterior surface ~~defining~~ disposed with at least one

circumferential row of openings formed over a substantial part of said exterior surface and confronting a ~~cylindrical~~ generally cylindrically-shaped interior of said housing to define an annular fluid volume, and rotating said rotor with fluid present in said annular fluid volume at sufficiently fast to cause said openings to impart heat-generating cavitation to a fluid within said chamber.

34. (currently amended) The method according to claim 33, wherein said device further comprises at least three circumferential rows of substantially radially configured blind holes forming said cavitation-inducing openings ~~longitudinally displaced from said axis of rotation towards the direction of said rotor travel for the amplification of the cavitational effect created by said openings, and wherein said method further comprises causing fluid to be exposed to a greater magnitude of cavitation by said openings to impart an increase in the level of heat-generating cavitation to a fluid entering said chamber~~, wherein respective longitudinal axes of said blind holes are offset from said axis of rotation to advance or retard the commencement of cavitation of the fluid.

35. (currently amended) The method according to claim [[34]] 33, wherein said device further comprises at least three circumferential rows of radially configured holes forming said

cavitation-inducing openings ~~longitudinally displaced from said axis of rotation towards the direction of said rotor travel~~ and interconnecting each other to form a continuous pathway for the transmission of shock waves in said openings, and wherein said method further comprising causing fluid to be exposed to a transmission of shock waves ~~in said openings~~ created in said continuous pathway ~~to impart an increase in the level of heat generating cavitation to a fluid entering said chamber~~.

36. (new) The fluid heating device according to claim 1 wherein said seal and said fluid inlet are disposed directly opposite each other in respective said end portions.

37. (new) The fluid heating device according to claim 24 wherein said housing comprises three members, one of the housing members being said intermediate portion and in the form of a sleeve, and where the other two housing members are the respective said end portions in the form of rear and front housing covers, said rear and front housing covers each provided with a circular register and said housing sleeve engaging respective registers and clamped between said rear and front housing covers by a plurality of bolts, one of said pair of bearings disposed in said rear housing cover in a position between said internal chamber and said fluid inlet,

said seal disposed adjacent the other of said pair of bearings in said front housing cover and exposed to said internal chamber.

38. (new) The fluid heating device according to claim 24 wherein said rotation axis intersects said fluid inlet opening exteriorly of said housing.

39. (new) A fluid heating device comprising a housing having an internal chamber, a fluid inlet and a fluid outlet disposed in said housing and in fluid communication with said main chamber, a rotor mounted for rotation within said internal chamber about an axis of rotation, said housing having an intermediate portion positioned radially outwardly of said rotor and end portions positioned axially outwardly of opposite faces of said rotor, said rotor comprising an outer surface confronting an inner surface of said intermediate portion and defining an annular fluid volume, said fluid inlet communicating with said annular fluid volume and situated nearer a distal end of said rotor and said fluid outlet communicating with said annular fluid volume and situated nearer the proximate end of said rotor, said outer surface having a plurality of openings disposed on said outer surface and where said openings are formed as blind radial holes arranged in at least three circumferential rows spaced

about said rotor along the longitudinal axis of said rotor, each of said at least three circumferential rows containing an equal number of said blind radial holes per row and where alternate rows are circumferentially displaced from adjacent rows to cause clustering of said at least three circumferential rows within a given axial length of said rotor, wherein rotation of said rotor causes said plurality of blind radial holes to impart heat-generating cavitation to a fluid entering said internal chamber.

40. (new) The fluid heating device according to claim 39 wherein said blind radial holes are formed having bottom-ends and top-ends such that their respective longitudinal axes are offset from said axis of rotation, wherein respective said top-ends or respective said bottom-ends are further advanced in the direction of rotor rotation.

41. (new) The fluid heating device according to claim 39 wherein said blind holes have a depth dimension extending the radius dimension of said rotor.

42. (new) The fluid heating device according to claim 39 wherein at least one of said circumferential rows contains blind holes with respective longitudinal axes disposed at an

oblique angle with respect to said longitudinal axis of said rotor.

43. (new) The fluid heating device according to claim 39 wherein said housing comprises three members, one of the housing members being said intermediate portion and in the form of a sleeve, and where the other two housing members are the respective said end portions in the form of rear and front housing covers, said rear and front housing covers each provided with a circular register and said housing sleeve engaging respective registers and clamped between said rear and front housing covers by a plurality of bolts, further comprising a drive shaft rotatably supported in said housing by bearings and extending into said internal chamber for imparting mechanical energy to said rotor, and wherein one of said bearings being disposed in said rear housing cover in a position between said internal chamber and said fluid inlet, another of said bearings being disposed in said front housing cover, a fluid seal disposed in said front housing cover and surrounding said drive shaft, said seal exposed to said internal chamber at the opposite side of said housing where said fluid inlet is located.

44. (new) The fluid heating device according to claim 43 wherein said axis of rotation intersects said fluid inlet.

45. (new) The fluid heating device according to claim 44, further comprising at least one inlet port disposed in said housing and wherein said fluid inlet is in communication with said internal chamber via said at least one inlet port.

46. (new) The fluid heating device according to claim 45 wherein said at least one inlet port lies radially closer to said axis of rotation than to said outer surface of said rotor.

47. (new) The fluid heating device according to claim 45 wherein said at least one inlet port lies radially outwardly of one of said bearings.